KBMOS Operating Objective
Kissimmee Basin Modeling and Operations Study

Flood Control Operating Objectives Associated with the C&SF Project
The Kissimmee Basin portion of the C&SF Project currently includes 13 water control structures. These include eight water control structures in the KUB and five water control structures in the LKB. The federal government authorized the Kissimmee Basin portion of the C&SF Project to protect lands adjacent to the lakes and along the Kissimmee River from frequent and prolonged flooding. The Study flood control operating objective is to constrain flooding to that which exists in the current condition.

Water Supply
For the KBMOS, the water supply operating objective applies to both human and environmental demands. Water utilities serving the communities within the KUB recognize that groundwater supplies are limited and are considering the option of using surface water. Before water can be allocated to meet public water supply demand, environmental demands associated with restoring ecological integrity to the Kissimmee River floodplain and maintaining existing fish and wildlife resources on the lake systems must be met. The Study water supply operating objective is to provide a feasibility level estimate of the quantity of water available to meet public water supply needs after the environmental demands of both the Kissimmee River and the KCOL are met.

Aquatic Plant Management
Lakes Kissimmee, Hatchineha, Cypress and Tohopekaliga, in the KCOL, have been impacted by an invasive exotic submersed plant, hydrilla (Hydrilla verticillata), that frequently has reached nuisance levels. Unmanaged, it is expected that some or all these lakes could develop potential infestations that would impact navigation and recreational use, tourism, real estate values, native plant communities, water quality, fisheries and flood control. In the past, the most cost-effective and environmentally compatible method for controlling large areas of hydrilla is whole-lake or large-scale herbicide applications. These applications were made between January and April and required lake levels to be lowered and gates to be closed to provide low-flow or no-flow conditions for the necessary chemical residence time (100–120 days). The Study aquatic plant management operating objective is to support whole-lake or large-scale applications of herbicide when their hydrologic requirements are compatible with other study operating objectives.

Natural Resources
Kissimmee Basin natural resource operating objectives are defined relative to the Kissimmee River, the Kissimmee Chain of Lakes, and Lake Okeechobee. These objectives are intended to sustain, enhance, and/or restore quality habitat for fish and wildlife resources.

Kissimmee River
The Kissimmee River Restoration Project was authorized under the Water Resources

Development Act (WRDA) of 1992. This project includes the Headwaters Revitalization Project and the Level II Backfilling Plan for the Kissimmee River. The project goal is to reestablish ecological integrity to the river channel and floodplain. Attaining the goal of ecological integrity depends on both reconstructing the physical form of the river and reestablishing a more natural regime of inflows from the Kissimmee Chain of Lakes to meet the project's needs. The Kissimmee River Headwaters Revitalization Project applies to Lakes Kissimmee, Hatchineha, and Cypress. It is intended to provide the storage and regulation schedule modifications to achieve or exceed the benefits prescribed for the Kissimmee River Restoration Prjoect; increase the quantity and quality of wetland habitat in the headwater lake littoral zones; and provide increased potential for recovery of endangered and threatened species. The Study natural resource operating objective for the river is to provide the hydrology required to meet the river's ecological integrity goal and the headwater lakes habitat enhancement goal.

Kissimmee Chain of Lakes

Although one of the C&SF project purposes is maintenance of lake stages at desirable levels for fish and wildlife (USACE 1994), current operating criteria do not meet these purposes. Current lake operating criteria stabilize water levels and allow for very limited inter-annual variability. These operating criteria have degraded lake littoral habitat quality and have impacted the diversity and abundance of fish and wildlife resources. The Study natural resource operating objective for the lakes is to provide the hydrology required to promote plant diversity, quality substrate, and fish and wildlife productivity within lake littoral habitats.

Lake Okeechobee

The KB is the largest watershed discharging to Lake Okeechobee and flows from the KB have the potential to negatively impact Lake Okeechobee water levels during flood and drought conditions. This interdependent relationship has the potential to also impact the estuaries and the Everglades. Although current discharges from the KB are not seen as completely desirable, it is not the intent of this study to improve discharges from the KB to meet desired Lake Okeechobee inflows. The Study operating objective for Lake Okeechobee is to avoid operations that make inflow conditions worse than the current condition.

Navigation and Recreation

The Federal Navigation Project within the Kissimmee Basin extends from the town of Kissimmee to Lake Okeechobee. The original navigation project was authorized in 1902, enhanced in 1954 with the Kissimmee River Flood Control Project authorization and was modified again in 1992 with the KRRP authorization. The current authorization provides for both continuous navigation through the system during the daylight hours of lock operations and maintenance of desirable water levels for recreation. The Study navigation and recreation operating objective is to minimize impacts to the Federal Navigation Project and recreational access to key public facilities.